

INTERSTATE COMMERCE COMMISSION.

INVESTIGATION OF ACCIDENT ON THE NEW YORK, NEW HAVEN & HARTFORD RAILROAD AT GREEN'S FARMS, CONN., ON NOVEMBER 16, 1912.

DECEMBER 18, 1912.

TO THE COMMISSION:

On November 16, 1912, there was a derailment of a passenger train on the New York, New Haven & Hartford Railroad at Green's Farms, Conn., resulting in the injury of 27 passengers.

Immediately upon receipt of telegraphic notice of this accident from the railroad company, Assistant Secretary McGinty proceeded to Green's Farms and inspectors were ordered to the scene of the accident to assist in the investigation. A public hearing regarding this accident was held by me at New Haven, Conn., on November 20, 1912, and the Public Utilities Commission of the State of Connecticut, which had entered upon an investigation on its own initiative, was invited to participate in and was represented at this hearing.

The investigation of this accident developed the following facts:

The derailed train was westbound passenger train No. 23, known as the Merchants' Limited, running from Boston to New York. It consisted of engine No. 1110, a combination baggage and parlor car, a dining car, two parlor cars, and one observation car, all the cars being of wooden construction and having reenforced steel platforms. Conductor Ross and Engineman Morley were in charge of this train.

Train No. 23 left New Haven at 8.20 p. m., on time, but on account of orders requiring reduced speed at Milford, Naugatuck Junction, and Bridgeport, the train was delayed about four minutes. At about 8.52 p. m. this train passed tower No. 53, at Green's Farms, and it was derailed between this tower and Green's Farms station, approximately 26 miles west of New Haven. The derailment occurred just west of a crossover switch west of tower No. 53.

This division of the New York, New Haven & Hartford Railroad is a four-track line operated under the controlled manual block-signal system. Tracks Nos. 1 and 3 were being used for westbound trains, and tracks Nos. 2 and 4 were being used for eastbound trains. At the time of the derailment train No. 23 was running on track No. 3. At the place where the accident occurred there is a No. 10 crossover leading from track No. 1 to track No. 3. The track is straight and practically level. It is laid with 30-foot rails weighing 100 pounds to

the yard, with an average of 16 ties under each rail. During the past three years all tie renewals have been made with creosoted ties, and at the time of the derailment about 60 per cent of the ties in this vicinity were treated ties. Tie-plates and screw spikes are used on all treated ties, while on ties that are not treated common driven spikes are used. The ties in many instances are double spiked on the outside, while all are single spiked on the inside of the rail. The ties used are of southern pine and native oak and chestnut. The ballast is of rock, varying in depth from 14 to 18 inches.

Train No. 23 was reported past Fairfield, about 3 miles east of Green's Farms, at 8.49 p. m. and passed tower No. 53 at 8.52 p. m. Just as this train was passing the tower at Green's Farms the parlor-car conductor, who was riding in the front end of the dining car, heard a thumping noise as though something was dragging under the car. He immediately went back to the rear end of the car and pulled the whistle signal cord, signaling the engineman to stop. The engineman answered this signal; looking back he saw the rear end of the dining car tip over to one side, and he applied the air brakes in emergency. When the train came to a stop the engine was about 1,400 feet beyond the point of derailment. The engine, tender, combination car, and dining car were still coupled together, although the dining car was derailed. The three rear cars were derailed but did not turn over. They came to a stop about 600 feet to the rear of the front portion of the train.

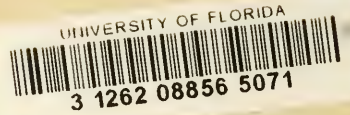
An examination of the derailed cars disclosed the fact that the front equalizer bar on the south side of the forward truck of the dining car had been broken. The dining car was built by the Pullman Co. in 1907, and had been in service since that time. The trucks were standard Pullman six-wheel trucks, having a steel-plated, wooden frame. There are four equalizer bars in each truck of this type, two on each side. The larger end of the forward equalizer bar rests on the forward journal box of the truck, the other end resting on the middle journal box. The larger end of the rear equalizer bar rests on the rear journal box of the truck, the other end resting on the middle journal box, and the two equalizer bars meeting over the middle journal box. The journal boxes are free to move up and down between the flanges of the pedestal jaws, carrying the equalizer bars with them, the ends of the equalizer bars resting on top of the journal boxes. The pedestal is formed in two parts, an inner and an outer jaw, each having two flanges which are cast together, the jaws being bolted to the truck frame. The ends of the equalizer bar come in between the pedestal jaws on top of the journal box and are not visible or accessible for an ordinary inspection. The equalizer bar was made of wrought iron, and at the place where the fracture occurred it was $3\frac{3}{4}$ inches wide and $2\frac{3}{4}$ inches thick.

That part of the forward equalizer bar on the south side of the forward truck of the dining car which rests on top of the front journal box was broken off. The larger part of this fracture was new. There was a small defect or crack about $1\frac{1}{4}$ inches long and $\frac{5}{16}$ inch deep in the under side of the equalizer bar in the angle where it rested on the corner of the forward journal box. This defect was so small and so located that it could not have been discovered by any inspection unless the equalizer bar had been removed from the truck, and the fracture itself was hidden and could not have been discovered by any ordinary inspection unless the equalizer bar had become displaced. It is believed that the fracture started with this flaw in the equalizer bar, and that it progressed very rapidly, so that the faulty bar would not have been noticeably defective at the point where the last inspection was made. The cars in this train were inspected on arrival in Boston the night before, and again after the train was made up for this trip. Between Boston and the point where the accident occurred the cars were inspected at Providence, New London, and New Haven. At New Haven a broken dynamo belt was discovered dragging under the dining car, and while an inspector was removing this belt the foreman inspector himself inspected the south side of the forward truck of the dining car; he found nothing out of order.

About three-quarters of a mile east of the point where the derailment occurred there was a mark on a tie outside of the south rail, and between that point and the crossover switch where the derailment occurred 13 similar marks were found, caused by the broken equalizer bar which had dropped sufficiently to strike the higher ties. The bottom of the broken equalizer bar was worn smooth, while at the turn near the front end of the car it was scarred on the sides. At the crossover the marks on the ties indicated that the equalizer bar had struck the insulated joint and the block at the heel of the frog; near the switch point the marks were deeper and more numerous than elsewhere. It was evident that the loosened equalizer bar had caused the journal box and pedestal in the middle of the truck to become defective and break down, allowing the equalizer bar to drop. The equalizer bar dragged through the trailing switch, springing the switch point, pushing the stock rail out of place, and allowing the wheels to drop from the rails.

On the roadway, some distance east of where the derailment occurred, the spring and spring seat which ride on top of the equalizer bar were found, but the equalizer bar itself did not come out of the truck until beyond the point of the derailment. It was found near the dining car after the train came to a stop.

It is estimated that the speed of the train at the time of the derailment was approximately 60 miles per hour. The schedule of this train prescribes 46 minutes for a distance of 40 miles, between New



Haven and Stamford. At the time of the derailment the train had been delayed about 4 minutes; there were no speed restrictions in effect at this point, the track was straight and the grade was practically level, so that conditions seemed favorable for making up lost time. The distance which the engine, combination car, and dining car ran after the emergency application of the brakes indicates that the train was running at high speed. Engines were changed at New Haven; the air brakes were tested there and found in good condition. The engineman used the brakes between New Haven and Green's Farms and he stated that they operated properly.

This derailment was caused by the breaking of the equalizer bar of the forward truck of the dining car, allowing the spring to come out and the truck to break down; and by the equalizer bar wedging in the crossover switch, throwing the rails out of alignment and allowing the wheels to drop off the rails. There was a defect in this equalizer bar, but it was so slight that it could not have been discovered by diligent inspection. It was impossible to determine what was the immediate cause of its fracture at this time.

Respectfully submitted.

H. W. BELNAP,
Chief Inspector of Safety Appliances.

